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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/026/324 02/09/98 COWAN

J ZH668/96001

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DM41/0311

EXAMINER

NATNITHITHADHA, N

ART UNIT	PAPER NUMBER
3	3736

DATE MAILED:

03/11/99 3

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary	Application No. 09/026,324	Applicant(s) Cowan et al
	Examiner Navin Natnithithadha	Group Art Unit 3736

Responsive to communication(s) filed on Feb 19, 1998

This action is **FINAL**.

Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

Claim(s) 1-32 is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

Claim(s) 1-8, 10, 11, 14, 22, 31, and 32 is/are allowed.

Claim(s) _____ is/are rejected.

Claim(s) 9, 12, 13, 15-21, and 23-30 is/are objected to.

Claims _____ are subject to restriction or election requirement.

Application Papers

See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

The drawing(s) filed on _____ is/are objected to by the Examiner.

The proposed drawing correction, filed on _____ is approved disapproved.

The specification is objected to by the Examiner.

The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

All Some* None of the CERTIFIED copies of the priority documents have been

received.

received in Application No. (Series Code/Serial Number) _____.

received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

Notice of References Cited, PTO-892

Information Disclosure Statement(s), PTO-1449, Paper No(s). 2

Interview Summary, PTO-413

Notice of Draftsperson's Patent Drawing Review, PTO-948

Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

Part III DETAILED ACTION

1. Claims 1-32 presented for examination.

Specification

2. The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

4. Claims 1-8 and 22 are rejected under 35 U.S.C. 102(e) as being anticipated by Lewis et al., U.S. Patent No. 5,762,611.

Lewis et al teaches the invention (claim 1) as claimed, including a method for determining an individual's intensity of focused attention (e.g., see Abstract), comprising the steps of:

- a) obtaining a representative frontal lobe brainwave signal from at least one first sensor in an electrically connective relation to the individual's frontal lobe taught as obtaining from a subject during a task period second brain signals proximate in time with a second stimuli (e.g., see claim 1, lines 54-63);
- b) obtaining a representative reference signal from at least one second sensor in an electrically connective relation to a more electrically-neutral location taught as obtaining from a subject during a baseline period first brain signals proximate in time with a second stimuli (e.g., see claim 1, lines 45-52);
- c) subtracting the representative reference signal from the representative frontal lobe brainwave signal to produce a difference frontal lobe brainwave signal, and processing the difference frontal lobe brainwave signal to produce an AIndicator signal indicative of the individual's intensity of focused attention, where the AIndicator signal is inversely proportional to any mathematical transformation of an amplitude measure of the difference frontal lobe brainwave signal taught as determining the magnitude of the first and second brain signals, comparing the difference in magnitude of the first and second brain signals, and which the interest of the subject in the task stimuli is assessed in accordance with the difference (e.g., see claim 1 and claim 2).

As to claims 2 and 3, Lewis et al teaches a frontal sensor (FZ) (e.g., see Fig. 3 and see col. 7, lines 10-19).

As to claim 4, Lewis et al teaches two electrodes M1 and M2 recording electrical brain signals from the left and right mastoid area, respectively (e.g., see Fig. 3 and see col. 7, lines 10-19).

As to claims 5-8, Lewis et al teaches measuring beta activity (approximately 13-20 Hz) to obtain at least one signal indicative of the level of attention in the subject (e.g., see claim 2).

As to claim 22, Lewis et al teaches the frontal sensor is attached to the scalp of the subject (e.g., see col. 7, lines 1-9).

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 31 and 32 are rejected under 35 U.S.C. 102(b) as being anticipated by Pope et al., U.S. Patent No. 5,377,100.

Pope et al teaches the invention (claims 31 and 32) as claimed, including a method using a brainwave signal to affect a program running on a computer (e.g., see Abstract), comprising the steps of:

a) providing a sensor to measure a brainwave signal and b) measuring the brainwave signal with the sensor and processing the brainwave signal to produce a processed signal taught as measuring electrical activity in the brain of the subject over time to obtain at least one signal having a value indicative of the level of attention in the subject (e.g., see claim 1, lines 16-20);

c) inputting the processed signal to the computer and using the processed signal to modify a logic driving the program taught as

“increasing the level of difficulty via the difficulty adjuster for the subject to interact with the objects depicted on the display as the value indicative of the level of attention decreases and decreasing the level of difficulty via the difficulty adjuster for the subject to interact with the objects depicted on the display as the value indicative of the level of attention increases over time, whereby the value indicative of the level of attention in the subject is inversely related to the level of difficulty for the subject to interact with the depicted objects” (e.g., see claim 1, and see col. 7, line 30 to col. 9, line 4).

d) inputting the processed signal to the computer, where the computer receives at least one other input signal from at least one other input device and where the processed signal changes an effect of the at least one other input signal taught as a measuring brain activity signals, using these signal to affect the level of difficulty signal of the video game. (e.g., see claim 1).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 9, 12, 13, 15-21, and 23-30 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent No. 4,955,388 teaches an electroencephalographic attention monitor.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Emr. Navin Natnithithadha, whose telephone number is (703) 305-2445. The examiner can normally be reached on M-TH from 8:00 a.m. to 5:00 p.m. EST.

If attempts to reach the examiner by phone fail, the examiner's supervisor, Cary E. O'Connor, can be reached at (703) 308-2701. Additionally, the fax phone for Art Unit 3736 is (703) 308-0758.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist at (703) 308-1148.

Navin Natnithithadha
Patent Examiner
Art Unit 3736
February 17, 1999

Robert L. Nasser Jr.
ROBERT L. NASSER
PRIMARY EXAMINER